

ENDOTHYRA BOWMANI PHILLIPS, [1846] v. *ENDOTHYRA BOWMANI* BROWN, 1843 (FORAMINIFERA); AN ALTERNATIVE PROPOSAL.

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1. The aim of this application is to request the International Commission on Zoological Nomenclature to use its plenary powers to secure a legal basis for the further use of the generic name *Endothyra* Phillips, [1846], sensu Brady, 1876. This well-known genus of Foraminifera has a great stratigraphic importance (especially for oil-geology) because of its wide distribution in the Carboniferous (Europe, America). The name *Endothyra* has been in use for nearly 120 years. This genus has given name to the family ENDOTHYRIDAE Brady, 1884, and to the order Endothyrida (Fursenko, 1959). The retention of the nominal genus *Endothyra* will promote the stability of nomenclature.

2. The genus *Endothyra*, as well as its type-species *Endothyra bowmani* (by monotypy), was first described by Brown (1843). Nevertheless, Brown regarded Phillips as the author of the genus and species, because Phillips was the first who found and named this foraminiferan, although he did not describe it until two years later (Phillips, 1845). Both Brown and Phillips figured cross-sections only. Brown (pl. VI, fig. 2) has figured a cross-section of a symmetrically coiled test with a great number of coils and chambers. Phillips (pl. VII, fig. 1) figured under the same name a cross-section also of a symmetrically coiled test, but of another specimen, incomplete and apparently belonging to another species; it differs from Brown's specimen by its more loosely coiled spiral, and by the smaller number of chambers and coils. Such figures are not adequate for the determination of the generic and specific characters of a test, and later authors found them useless.

3. Brady (1876) was the first to give a full and adequate description and figures of a longitudinal- and a cross-section, as well as a figure of the external aspect of a foraminiferan, which he also named *Endothyra bowmani* Phillips. This author was the only one who gave all the characteristic traits and during 84 years the genus *Endothyra* and the species *E. bowmani* were understood in the sense given to them by Brady.

4. Subsequent authors did not attach any great significance to the fact that the specimen described by Brady is characterised by irregular coiling with considerable axial divergence, contrary to the specimens figured by Brown and Phillips. It was A. V. Mikhailov (1939) who first drew attention to the disparity between *Endothyra bowmani* sensu Brady and *Endothyra bowmani* sensu Brown, and proposed to regard the first as a new species—*Endothyra bradyi* Mikhailov.

5. Zeller (1950), establishing the genus *Plectogyra* with *Pl. plectogyra* Zeller as type-species and comparing it with the genus *Endothyra* Phillips, showed that the distinctive features of these genera consist of the different

ways in which the spiral is coiled : *Plectogyra* is characterised by three-measured coiling while to the genus *Endothyra* Phillips, forms with regularly coiled spirals must be referred if one judges by Brown's figure. It follows that the specimen figured by Brady under the name of *Endothyra bowmani*, characterised by an asymmetrical coiling, that is by its axis changing its direction several times, belongs to a species of the genus *Plectogyra*.

6. However, the features of *Endothyra bowmani* Phillips cannot be drawn from the diagnosis given by Brown and Phillips, because these authors have not described the wall-structure and have figured cross-sections only. In accordance with recent systematics it is possible to suppose with equal probability that the foraminiferan described by Brown and Phillips, characterised by a planispiral regularly coiled test with a rather large number of coils, could belong either to the family FUSULINIDAE (*Pseudoendothyra* Mikhailov, 1939, or *Eostaffella* Rauser, 1948), or to the family ENDOTHYRIDAE (*Quasiendothyra* Rauser, 1948, or *Loeblichia* Cummings, 1955 or other genera of this family characterised by a planispiral test and differing in cross-section but slightly from some fusulinids). Thus, the absence of data concerning the wall-structure and the absence of other than cross-sections deprives us of the possibility of determining which of the later diagnosed genera is a synonym of *Endothyra* Phillips in Brown, 1843.

7. Attempts to study the original specimens or the topotypes were not successful. It has been impossible to establish the type-locality because Brown and Phillips did not exactly designate it (Mountain Limestone in Westmorland). On the other hand the original specimens were also inaccessible for further study as can be seen from the following obligingly written communication by Cummings: "... both the Brown Collection and the Phillips Collection have been lost and despite intensive search over the last few years, no trace of the missing specimens can be found. Furthermore neither of these two workers gave clear and precise information as to the localities from which the material was collected. Hence it is not possible to collect other type-specimens." (Letter of 10 February 1960.)

8. All that has been stated above gives us the right to regard *Endothyra bowmani* Phillips as a nomen dubium because for more than a century no author has figured or described specimens which could be compared with those figured by Brown and Phillips and so the systematic position of their specimens is still obscure. Identical cross-sections can be found among the members of many different genera.

9. As the nominal genus *Endothyra* in the sense given to it by Brady (1876) has been widely known during the past 84 years, it is necessary for the stabilization of nomenclature to preserve the nominal genus *Endothyra* Phillips in Brown with *Endothyra bradyi* Mikhailov, 1939 (= *Endothyra bowmani* Brady, 1876) as its type-species.

10. In this case a strict application of the rules of zoological nomenclature is impossible. Many American palaeontologists have applied the name "Endothyra" to members of the genus *Eostaffella* Rauser, 1948 (Order Fusulinida). Russian micropaleontologists take the genus *Endothyra* in Brady's sense, distinguishing only some of the species under the name of

Plectogyra Zeller, 1950 (Order Endothyrida). Renaming of the family, superfamily and Order based on the nominal genus *Endothyra* will bring great confusion into the systematics of Foraminifera. And though the problem is disputable, there is no possibility of regulating it by the strict application of the rules of zoological nomenclature, as the characteristic features of the figured cross-sections given both by Brown and Phillips can be attributed to many genera of the order Fusulinida as well as to several forms of the Order Endothyrida.

11. The existing confusion in systematics has results reflected in the difficulty of deciphering the lists of Foraminifera and reduces their correlative and stratigraphical importance.

12. With the aim of stabilising the usage of the concerned names it is necessary for the Commission to take the following action:

- (1) (a) to use its plenary powers to suppress all former designations of type-species for the genus *Endothyra* ;
- (b) to designate *Endothyra bradyi* Mikhailov, 1939 (= *Endothyra bowmani* Brady, 1876 (non Phillips)) as the type-species of the genus *Endothyra* ;
- (2) to place the generic name *Endothyra* Phillips in Brown, 1843 (gender : feminine), type-species, by designation under plenary powers in (1) above, *Endothyra bradyi* Mikhailov, 1939, on the Official List of Generic Names in Zoology.;
- (3) to place the specific name *bradyi* Mikhailov, 1939, as published in the binomen *Endothyra bradyi* (type-species of *Endothyra* Phillips in Brown, 1843) on the Official List of Specific Names in Zoology.

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